DOCUMENT RESUME

ED 306 431 CE 052 404

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TITLE	Performance Indicators in TAFE.
INSTITUTION	TAFE National Centre for Research and Development, Payneham (Australia).
REPORT NO	ISBN-0-86397-308-6
PUB DATE	88
NOTE	58p.
AVAILABLE FROM	Nelson Wadsworth, P.O. Box 4725, Melbourne, Victoria 3001, Australia.
PUB TYPE	Information Analyses (070)
EDRS PRICE	MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	*Accountability; Adult Education; *Evaluation Criteria; Evaluation Methods; Foreign Countries; Measurement Techniques; Postsecondary Education; *Program Effectiveness; *Program Evaluation; *Program Validation; Summative Evaluation
IDENTIFIERS	*Australia

ABSTRACT

Intended for policymakers, administrators, and others involved in determining how the efficiency and effectiveness of technical and further education (TAFE) should be measured, this monograph contains the following sections: (1) "Introduction," including a explanation of the origins of the push for performance indicators and the re ponse to it; (2) "A Case for Performance Indicators? Some Conceptual Issues," which discusses cost-effectiveness and the role of performance indicators; (3) "What Are Performance Indicators? Some Definitions," including the relationship between performance indicators and program evaluation and validation; (4) "Four Factors to be Considered in Developing Performance Indicators," which explains the political, financial, administrative, and educational factors; (5) "Some Performance Indicators," with examples of those that indicate effectiveness and those that indicate efficiency; (6) "Performance Indicators--Some Issues and Concerns"; and (7) "Some Conclusions." A list of 44 references concludes the document. (CML)

TAFE

TAFE NATIONAL CENTRE FOR RESEARCH AND DEVELOPMENT LTD.

PERFORMANCE INDICATORS

IN

TAFE

Hugh Guthrie

TAFE National Centre for Research and Development

ISBN 0 86397 308 6 (Hard Copy)
TD/TNC 17.4

Typed by: Kerrie Lee

Published By:
TAFE National Centre for
Research and Development
296 Payneham Road
Payneham SA 5070
(Incorporated in South Australia)

Printed by D. J. Woolman, Government Printer, South Australia

ACKNOWLEDGEMENTS

I would like to thank the following people who assisted in various ways in the production of this monograph:

- Bill Hall, Peter Thomson and Geoff Hayton were useful "sounding boards" for the ideas this monograph contains. Bill provided valuable comments on the first draft. Geoff helped me to develop a number of the figures. Peter fed me valuable articles and kept me appropriately sceptical.

- my colleagues from various TAFE authorities who attended a national workshop held in February 1988 provided me with valuable background knowledge about what was happening in various states. The report produced by that workshop has been used as a basis for defining the indicators which are, or might be, used by TAFE authorities.

- Charles Henderson, David Goldsworthy and Don Matters provided valuable discussion and feedback. Needless to say, however, any omissions, errors or logical flaws are my own.

CONTENTS

CONTENTS (Cont)

INTRODUCTION

Whilst educational accountability is not a new phenomenon in TAFE, the push towards the development of indicators of performance as variables within an accountability mechanism has gained impetus in Australia over recent years. Much of this impetus has come from demands by stakeholders in the educational process that better use be made of scarce and often diminishing resources. Better use usually implies that both the efficiency and effectiveness of provision be improved. Performance indicators have been or are being developed by TAFE systems throughout Australia.

Performance indicators in an educational context are broadly concerned with measuring educational outcomes and are reflections of efficiency and effectiveness; in other words, performance indicators are those factors which will provide a perception of what is actually going on and how well things are working. Examples of indicators include:

- graduate success rate;
- student and industry satisfaction with program provision;
- participation rate according to demographic group;
- recurrent cost per subject per student; and
- average teaching hours per full-time TAFE lecturer.

THE COMMONWEALTH'S PUSH FOR PERFORMANCE INDICATORS

Skills for Australia, a discussion paper circulated by the Hon. John Dawkins and the Hon. Clyde Holding, has suggested the need for fiscal constraint as well as the need to improve both the efficiency and effectiveness of education and training. This paper is worth quoting at length. It points out that:

> The Government recognises that there a number of approaches which can be taken to achieve the desired increases in the quality and flexibility of our labour force skills. Some of these . . . will involve the development of new structures and programs of action. Others will rely heavily on the enhancement and more effective use of existing structures.

The best possible result must be achieved with the resources which can be made available. As in other industries served by our education and training system, there is considerable scope to improve the outputs from our present stock of education and training resources. Given that salary costs make up about 80% of total recurrent budgets for education and training, the productivity of staffing resources is one issue that requires attention.

Special attention will also be paid to the relative efficiency and value of the various approaches taken to achieve program objectives. Accordingly, plans for the systematic monitoring and evaluation of each program will be developed. **The impact of programs will be assessed to determine their continued relevance and priority, and to ensure that desired outcomes are achieved in the most cost-effective manner.** (my emphasis) A flexible approach to the achievement of the Government's objectives will thus be maintained, and programs modified in the light of effectiveness and efficiency considerations.

(Skills for Australia, 1987 p.17-18)

Moreover the paper suggests that with respect to the current Commonwealth funding arrangements there are a number of significant limitations in TAFE, especially in the recurrent expenditure area. These include:

- an absence of clear program goals and targets;
- a heavy emphasis on the funding of educational inputs rather than the achievement of specified outcomes;
- for the most part, the lack of a direct relationship to wider economic, industry development or labour market objectives;
- the lack of inducements to greater public and private sector co-operation in the delivery of training and the sharing of training costs;
- the absence of any substantial evaluation of program effectiveness.

(Skills for Australia, 1987 p.33)

The Skills for Australia document (1987) goes on to point out that the Review of TAFE Funding report (May 1986) concluded that there was a need for "considerable restructuring of Commonwealth grants for TAFE and the arrangements under which they are provided in order to serve more effectively an outcomes-oriented approach with effective accountability" (Skills for Australia, 1987, p.33).

The federal government's recent White Paper on higher education supports the development of a system of performance indicators and intends to develop funding arrangements:

> . . . that take into account a range of output, quality and performance measures . . .
>
> (Higher Education, 1988 p.85)

These performance measures could be based on mutually agreed goals. The Australian Vice-Chancellor's Committee (AVCC) and the Australian Committee of Directors and Principals in Advanced Education (ACDP) are attempting to define:

> a comprehensive and workable set of performance indicators for general application in higher education institutions.
>
> (Higher Education, 1988 p.86)

The preliminary report of the joint AVCC/ACDP working party is cited in the Bibliography on page 49.

From the federal perspective there is clearly a strong inducement for TAFE and other tertiary systems and institutions receiving federal monies to develop appropriate and useful indicators of performance.

INITIATIVES AT THE STATE LEVEL

John White, the TAFE National Centre's first Senior Fellow, examined the issue of educational accountability and the need for comprehensive evaluation in TAFE in order to provide an extension and reinforcement for an educational management process based on effective planning (White 1987). His report provides a useful overview to the whole question of using performance indicators in TAFE at the state level.

In New South Wales the Annual Reports (Departments) Act, 1985 requires that annual reports of particular government departments and statutory bodies include qualitative and quantitative measures of performance which evaluate the appropriateness, efficiency and effectiveness of progress as well as information about client reaction to the services

provided. The memorandum from the Premier of New South Wales to his Ministers entitled "Management Performance Review (16 April 1986)" states:

> Reports will be narrative, but as required by Regulations being drafted under the Annual Reports Acts, will, where practicable, include qualitative and quantitative measures and indicators of performance showing levels of efficiency and effectiveness.
>
> Emphasis should be on the development of performance indicators which relate to or explain what is being achieved by the programs. These performance indicators should make possible comparison with past results and planned achievements.
>
> (Wells, 1986 p.2-3)

In addition White (1987) has noted that the NSW legislation requires that an account of the major issues and problems encountered during the year of reporting be provided.

In Western Australia the Financial Administration and Audit Act, 1986 requires every government department and instrumentality to produce an annual report containing performance indicators (Henderson, 1987). This legislation was based on that used in New South Wales.

As part of the Savage initiatives all government departments and sub-departments in Queensland are required to establish:

- a strategic plan;
- an on-going planning process;
- performance indicators; and
- a program management structure (Newell 1987).

Most other state/territory TAFE authorities use performance indicators at least to some extent. For example in South Australia the appointment of a new Director-General has added impetus to the development of performance measures in that state. Victorian TAFE has developed a performance improvement plan. There are also negotiated performance agreements between the State Training Board and individual colleges.

SOME RESPONSES BY TAFE AT THE NATIONAL LEVEL

Early in 1988 a 2-day meeting was held in Melbourne which gathered together individuals from a number of states and the TAFE National Centre who had an interest in the development and use of performance indicators. Their deliberations produced a

report which was submitted to the Conference of TAFE Directors (TAFE Performance Indicators Planning Group 1988). The report has also been considered at the Australian Committee on TAFE Curriculum. As a result of this report a national working party was set up to look at national data requirements for TAFE. A meeting was held in early August convened by John Swan, the General Manager, Vocational Education and Training, Queensland. This meeting resolved that:

- the report of the nationally-based working group on performance indicators which met in Melbourne in February 1 and 2 be endorsed, with some modifications; and

- that the working group should reconvene to refine definitions of chosen indicators and to develop methodologies for collecting the information.

Clearly there is considerable interest in performance indicators in TAFE in Australia.

THE AIMS OF THIS MONOGRAPH

This present monograph has a number of purposes. Given the increasing interest in the measurement of educational performance it seems timely to produce a monograph which will examine:

- why there may or may not be a case for developing and using performance indicators;

- what performance indicators are;

- the context in which they are or will be used;

- some of the commonly-used measures; and

- some of the issues and questions which arise when performance indicators are being considered or are already in use.

Finally the monograph will try to draw some useful and valuable conclusions.

A CASE FOR PERFORMANCE INDICATORS? - SOME CONTEXTUAL ISSUES

THE MORAL DIMENSION OF TAFE

Technical and further education is a service industry. It is concerned with providing learning opportunities for those in industry and commerce, for tradespeople and technicians - indeed a whole range of important occupational areas with a wide variety of training needs. In addition, TAFE services society's further education needs by providing enrichment programs and post-initial training. Furthermore, TAFE provides a means of access to education for those isolated by distance or by personal and physical handicaps. Finally, it attempts to cater for the needs of significant minority groups such as migrants and Aboriginal people. Therefore, while TAFE has the important role in the mainstream of education and training, it has an important moral role as well. TAFE represents an important mechanism by which society exercises its duty and role to provide its members with the best education and the widest range of opportunities possible. For some time TAFE has been amongst the vanguard of those bodies attempting to redress some of the existing inequalities as well as providing educational services to those who might otherwise be denied these opportunities. TAFE attempts to enhance peoples' options and choices. One of TAFE's major problems however, is to determine priorities from the competing demands made upon it by various sectors in society.

THE PRAGMATIC DIMENSION OF TAFE

The way in which TAFE goes about providing options and choices ranging from the individualised approach which customises a program to suit a particular circumstance, to the package deal which (as Theodossin 1987 points out) is the down- market end of the educational business. The down-market end is characterised by set curricula and off-the-peg materials. Modifications and extras are not allowed or, at least, actively discouraged. At best, they are available at extra cost. As one moves progressively up-market the programs are increasingly tailored to meet the individual needs of the client. The provision of educational goods and services attracts costs and it is the client's willingness to pay or the system's willingness (or ability) to provide those services which dictate what an educational package will finally cost the public purse.

Moreover, relatively large and complex systems like TAFE do not change precipitously, although presently there are significant changes going on, or mooted, in a number of key areas of the Australian economy. Providers are constrained by state-based and even national curricula, industry and occupational

structures, industrial awards and recognised career pathways. Change, when it occurs, is generally slow and sometimes incremental. This may suit the systems because they have often invested considerable time and effort (and therefore money) in developing programs. Wholesale and rapid changes may mean that desirable economies of scale are not achieved. If materials date rapidly resources have to be invested to provide more up-to-date materials. The cost of doing this needs to be justified. TAFE authorities, though, recognise that they have to be relevant.

Another dimension of TAFE is therefore pragmatic. It recognises that its programs cost money and that those who control educational funds are being held more and more accountable for their use. In short, TAFE has to be, and be seen to be, relevant and both efficient and effective. It has to make the best use of the resources allocated to it and may have to justify the expenditure of the funds it has received. It may also have to justify its claims for additional funds to enhance or restructure existing services, or to develop new services. The development of new services may mean that existing services in certain areas have to be reduced or curtailed altogether. This may lead to hard decisions being made about which services can be reduced or discontinued in order to service areas of expanding need. The pragmatic dimension is concerned with accountability and with ensuring efficiency and effectiveness. Nevertheless the moral dimension cannot be ignored in the decision-making process. Hence programs which could never be justified in pragmatic terms still need to be developed or maintained because of their moral significance. In pragmatic terms they should be as efficient and effective as possible, but their moral importance precludes them being judged by generally- held criteria. To ensure that the moral and pragmatic dimensions are balanced properly, any decisions made should be based on informed judgements. This is where performance indicators come in.

THE NOTION OF COST-EFFECTIVENESS

Being cost-effective is believed to be a desirable educational outcome, given the present concerns about financial restraint and the creation of additional learning capacity at minimum cost (particularly to governments). Some have suggested that the drive towards improving cost-effectiveness is efficiency-motivated (for example, Franchak 1981). The real context of cost-effectiveness seems, to me, to be the measurement of performance, or outcomes, in relation to cost. Nevertheless the proper balancing of the moral and pragmatic dimensions of TAFE's provision of services cannot be ignored. Cost-effectiveness is therefore part of our increasing concern for developing and using indicators of performance to measure the outcomes of educational systems such as TAFE and their component parts. Performance indicators can therefore be used as management tools.

As Newell (1987) points out, there are two main criteria that have to be considered in assessing TAFE's performance in the provision of its services, namely:

- its responsiveness to community and industry needs in the development and provision of adequate and timely programs; and

- operational efficiency and effectiveness.

Newell's criteria embrace both the moral and pragmatic dimensions.

THE ROLE OF PERFORMANCE INDICATORS

Why use performance indicators? The balancing of the moral and the pragmatic dimensions clearly indicate that the "benchmarks" which might be used to compare performances would shift according to the position of the appropriate balance point. Like programs might be compared with like, but comparing the performance of an access program for Aboriginal people in remote areas with the performance of a major city-based trade course would clearly have problems.

Performance indicators relate to the way in which TAFE does what it does. Most of TAFE's activity is based on identified or "perceived" needs. These needs generate "objectives". Objectives lead to "strategies" being put in place. These strategies have "outcomes" (Figure 1).

This is a linear planning process. Naturally in "real life" this linear process has a number of feedback loops and I will describe some of these shortly.

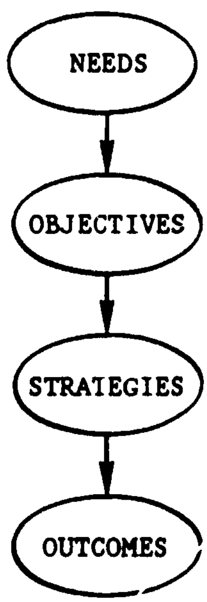

Figure 1

Once some sort of strategy is in place the development of appropriate activities can occur. The strategy might, for example, be a curriculum document or a plan to provide training and retraining for an industry. Thus strategies have "activities" or "doing" things associated with them. These activities have "inputs" and give rise to "outputs" (Figure 2). Inputs are defined by Birch and Latcham (1985) as all the variables entering the system - for example:

- students - their knowledge, skills, aptitudes, attitudes, motivations and expectations at entry;
- staff - academic, administrative, technical - their competencies, experience, attitudes, motivations and expectations;
- money - the funds committed to or earned by the system; and
- physical facilities - buildings, books, equipment etc.

Outputs are defined (Henderson, 1987) as events, objects or services generated by program activities. He defines outcomes as the effect, the impact, which the outputs are intended to exercise on the original need or problem. Thus outputs might be considered as indicators of the extent to which some of the desired outcomes have been achieved, given the original need or problem. Outputs and outcomes are therefore related.

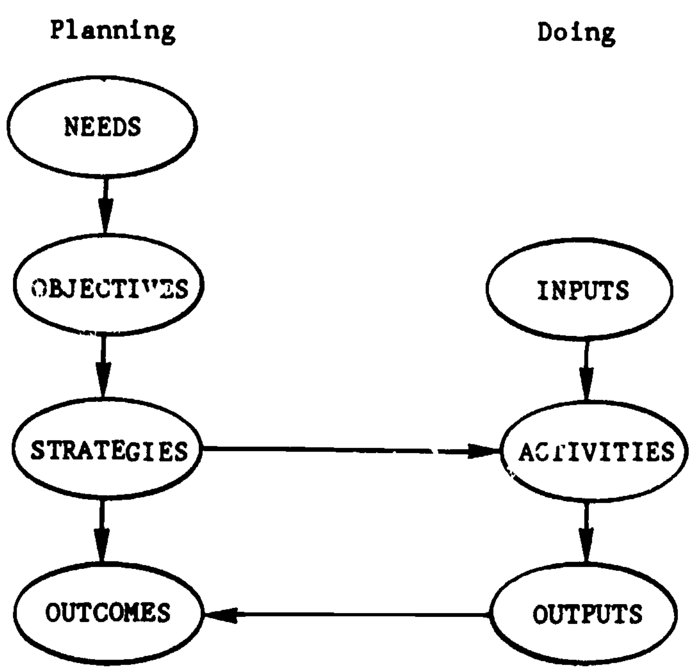

Figure 2

The relationship between inputs and outputs is used in the development of <u>efficiency</u> measures. Efficiency measures are usually relatively easy to quantify and hence are useful as gross comparative measures. The relationship between objectives and needs helps to determine the <u>appropriateness</u> of an activity or strategy. Finally, the relationship between the outcomes and objectives gives an indication of program <u>effectiveness</u> (Figure 3). Ideally, performance indicators are concerned with measuring the efficiency, effectiveness and appropriateness of programs, activities or strategies.

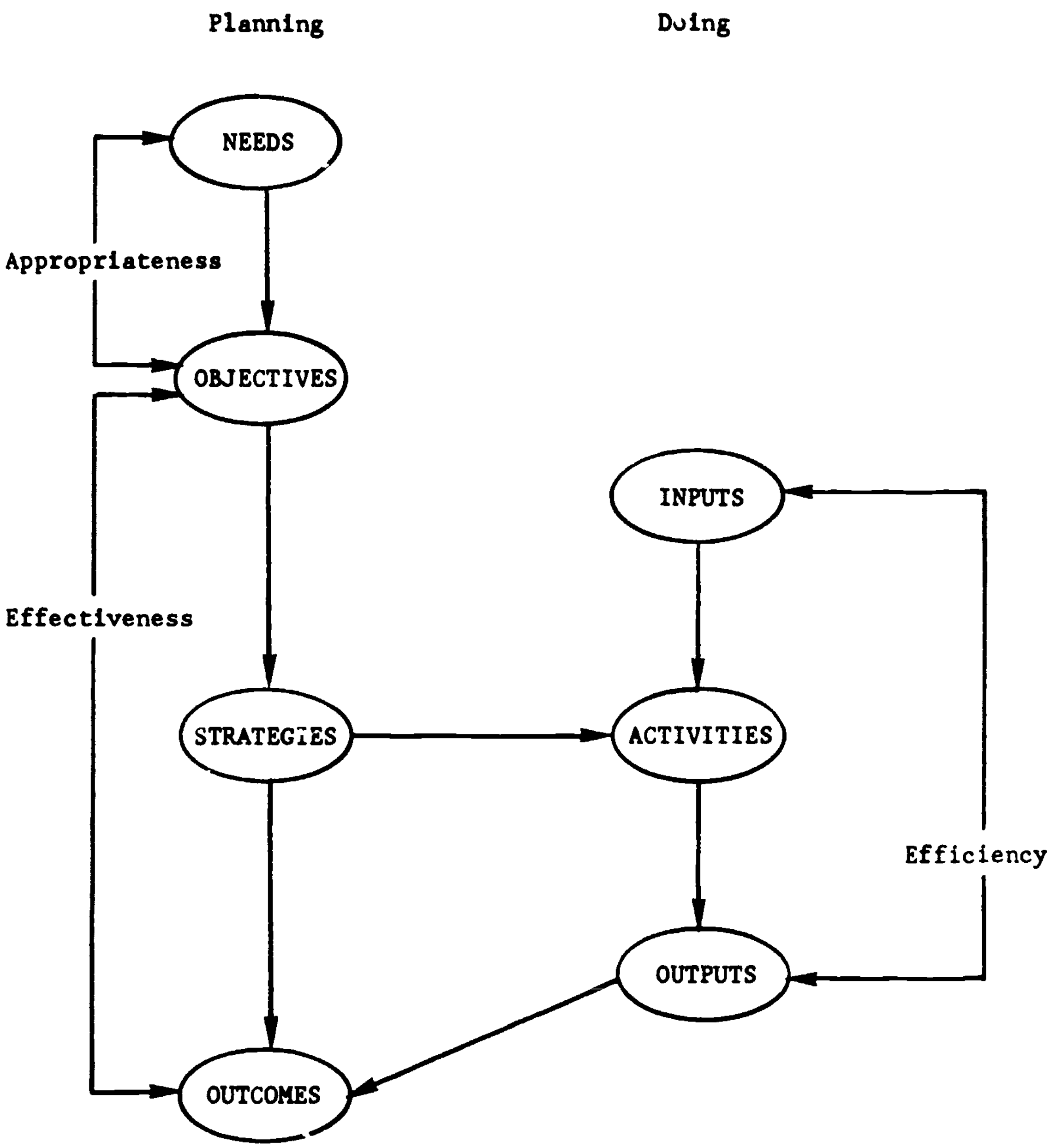

Figure 3

SOME CONCERNS ABOUT PERFORMANCE INDICATORS

When needs and outcomes are discussed it must be clearly recognised that:

- there are real and perceived needs. The success of any activity, or strategy, is tied up with the extent to which the perceived needs on which it was based match the real needs the client group had. In essence a program could achieve its outcomes, but if the perceived needs on which it was based originally were inappropriate, or had changed, it might be argued that the program had not performed well; and

- there are intended and unintended outcomes. The intended outcomes are clearly based on the objectives of the strategy which, in turn, were based on the perceived needs. Thus, attention is focused on the intended outcomes and the extent to which they were achieved. (This gives a measure of effectiveness.) However if the program, through its activities produces other outcomes, what then? To what extent do they contribute to judgements about effectiveness? These unintended outcomes could, after all, be good or bad, but the system which monitors performance may take little if any account of these. It is likely that data relevant to these outcomes will not even be collected. Thus, how does "the system" cope with an important but unintended outcome?

TAFE systems as a rule dedicate considerable effort to the identification of needs and the prodution of objectives - and to the planning and designing of activities. To a lesser extent it collects information about inputs and outputs. Little, if any emphasis is placed on the effective and comprehensive measurement of educational outcomes, yet good effectiveness measures are needed if TAFE's performance is to be judged validly.

Education systems often have a tendency to view accountability as a method of punishment. TAFE is no exception to this. As Henderson (1987) points out, there is no doubt that performance indicators can be used punitively. Amongst the issues and concerns raised later in this paper will be the number and type of indicators chosen, who uses them and how they are used. Nevertheless there are also many positive reasons for using performance indicators.

PERFORMANCE INDICATORS - SOME POSITIVES

Theoretically at least, the arguments supporting the development and use of performance indicators is a compelling one. Indicators of performance can provide valuable planning and management tools. Therefore they are defensible in pragmatic terms.

In addition to their "pragmatic" value as management tools they are morally defensible as well. TAFE is, and should continue to be, accountable for what it does. Governments and other important client and interest groups have a right to know the quality of the services provided, that is, how well these services measure up. Performance indicators can provide measures of the extent to which the TAFE systems and their components are responsive to society's needs. For example:

- Have the short- to medium-term needs of the economy been addressed by TAFE's activities?

- Has the relevant TAFE system taken account of government strategies to enhance social justice?

These, and many other questions can be directed at TAFE. Questions can also be asked about the quality of the programs provided. Questions might also be asked about the mechanisms TAFE uses to improve the quality of its program content, its processes and its products. Failure to provide satisfactory answers can, at worst, leave TAFE open to a potential barrage of innuendo and unsubstantiated assertion which undermines TAFE's credibility in the eyes of its clients, including the government and the general community. If performance information is readily available such situations should not arise.

In summary, performance indicators may be used in a positive way:

- for improvement-orientated decision-making;

- as a management tool to maintain or enhance the efficiency of the resources and activities for which they are responsible;

- for diagnostic purposes - in that they allow identification of strengths and weaknesses which, following analysis, would allow remediation measures to be taken to improve effectiveness;

- to ensure that TAFE is meeting the needs of important client groups (including the role it is asked to play in achieving greater social equity and improving individual peoples' opportunities.)

Essentially I am asserting that, in theory at least, performance indicators are a valuable and necessary management, decision-making and diagnostic tool. They have a planning role. They also have an accountability role. Finally they can be used as a mechanism of quality assurance. This relates, in part, to their management role, but allows those at all levels within TAFE to participate in the diagnostic, decision-making and improvement process.

However, performance indicators can succeed or fail in the translation of a theoretically sound concept into practice. This monograph will now consider what performance indicators are, and will deal with factors affecting their use. It will also consider the various issues and concerns raised about them and the way they are used in practice.

WHAT ARE PERFORMANCE INDICATORS? - SOME DEFINITIONS

PERFORMANCE INDICATORS DEFINED

As I have already suggested, performance indicators are broadly concerned with measuring educational outcomes and are reflections of efficiency and effectiveness; in other words, performance indicators are factors which will provide a perception of what is actually going on, and how well things are working. They are indicators of how well, and how efficiently, programs or other system components are achieving the desired outcomes. Theodossin (1987) points out that, in using performance indicators:

> We are seeking indications, characteristics, pointers, tokens, signals, symbols, something partial which reflects a larger whole, performance indicators which serve a surrogate or proxy function.
>
> (Theodossin, 1987 p.9)

Henderson (1987) has defined performance indicators as:

> . . . indicators of the extent to which programs are achieving the desired results. They should define the measurement of a piece of important and useful information about the performance of a programme expressed as an index, rate or other comparison which is monitored at regular intervals and is compared with a benchmark.
>
> (Henderson, 1987 p.3)

Performance indicators are therefore substitutes for things which cannot be assessed directly. Moreover, I have already argued, that system performance is affected by the extent to which the perceived needs correctly reflect the real needs. Therefore any system of assessing performance must ultimately seek to assess the appropriateness of its strategies and activities.

Henderson (1987) points out that the Western Australian act requires that indicators be:

- <u>**relevant**</u> - they must be logically related to user's needs and be based on objectives which clearly communicate what is to be measured;

- **verifiable** - appropriately qualified individuals working independently should arrive at essentially similar conclusions or results;

- **free from bias** - data are impartially gathered, the statistical treatment is free from bias, and the data are impartially reported; and

- **quantifiable** - measurable against pre-determined objectives to ascertain the degree to which the objectives have been achieved. Thus they are only meaningful if they relate to the stated objective to be measured and can be compared with a realistic and attainable benchmark.

While the first three requirements could generally not be disputed, the final requirement of quantifiability might cause some concern. The key word is "measurable" and the important factor is how, precisely, indicators can be "measured". In some cases, performance indicators would have little or no meaning if only quantitative measures were allowed. Clearly a balance has to be struck between the relative convenience of quantitative or counting measures and the qualitative measures which have the potential to enrich, and help explain, these quantitative measures. A simple example should demonstrate this. A student receives a grade of 72% for an essay. What precisely does this mean? It means very little unless the mark is related to other students' marks for the same essay question - that is, the score has a benchmark of some kind. The meaning of the mark is enriched still further if there is information available about the strengths and weaknesses of the essay as a piece of writing and the extent to which it addressed the essay question posed. I therefore suggest that qualitative as well as quantitative information must be incorporated in any comprehensive suite of performance indicators since the former aids interpretation while the latter enables comparisons to be made more readily. Moreover a <u>number</u> of measures need to be used because, as Roe and Moses (1986) suggest:

> . . . performance is far too complex to be reliably or validly assessed on a points or any other quantitative system. Such assessments might entirely miss or misrepresent the living reality . . . because some of the important factors in (organisational) performance are human and/or intangible; residing, for example, in reputation, influence, climate, morale, motivation, sense of direction, leadership, originality, shared values and creative thought. Such assessments (are) therefore regarded as entirely unsuitable for bureaucratic decision-making.
>
> (Roe and Moses, 1986 p.73)

Roe and Moses (1986) were, like others, alarmed at the potential misuse of indicators. Their concerns included that:

- indicators could fail to capture the essence of what was happening;
- organisations would tailor their performance to fit the chosen indicators. In short, the indicators could become strait-jackets; and
- indicators could be imposed from above rather than negotiated.

Performance indicators can be used at various levels within an organisational structure. In the New South Wales and Western Australian legislation the TAFE system as a whole is reporting performance indicators to government, but this information can be put together or split up (and enhanced) in various ways at lower levels in the system. The hierarchy used might be the one shown in Figure 4.

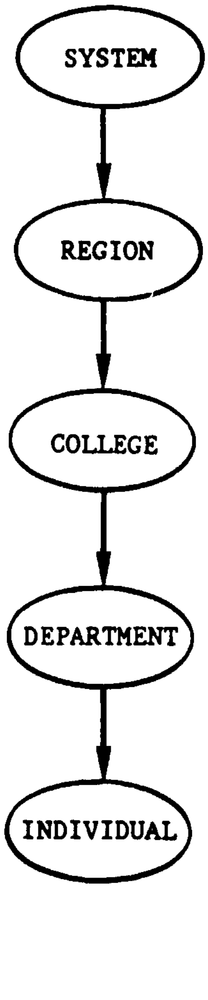

Figure 4

This hierarchy potentially begins at the level of the system and ends with an examination of the performance of individuals. The information is in its most consolidated form at the highest or system level. At lower levels it can be put together or broken down in various ways to suit the needs of that level in the system.

Alternatively it might be that shown in Figure 5.

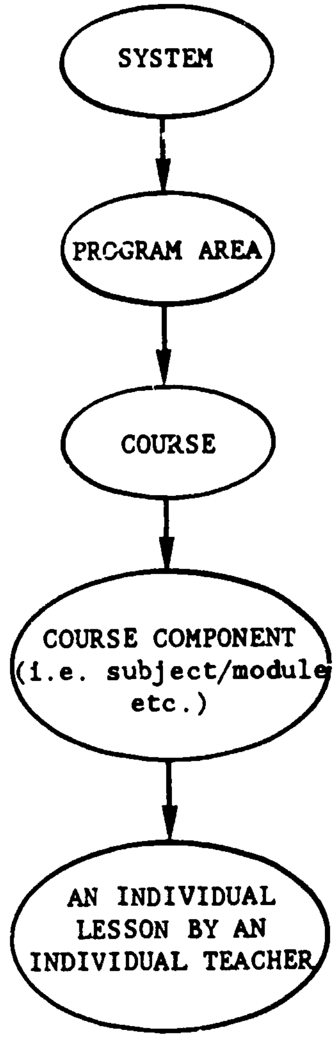

Figure 5

While the first method of arranging the information was concerned with TAFE's operational units (colleges, departments, regions etc.), the second is concerned with the way in which a TAFE system organises its educational or program provision. This may run across colleges, departments and regions and is concerned with what TAFE does in its various courses and course elements.

The approach adopted for the development of suitable indicators for a TAFE system is determined by the circumstances encountered, the purposes of performance indicators and the level of review required.

PERFORMANCE INDICATORS, EVALUATION AND VALIDATION

While the link is not often made, the processes used in program evaluation and validation have considerable relevance to the measurement of performance. In the context of the Victorian TAFE system it has been suggested that program validation (a form of "summative" evaluation) is outwardly focused and concerned with determining the worth of a program both in terms of the extent to which clients' needs have been met and the extent to which they have been satisfied with program outcomes; that is, is the program doing the right thing? On the other hand, program evaluation is seen as inwardly focused (a "formative" exercise) and places value on determining the worth of activities occurring in a program's process. The emphasis of evaluation, it is suggested, could be rather more on the improvement of worth and rather less as a judgement of worth. It aims to improve the quality of program delivery and process (Making Changes 1986; Guthrie and Foyster 1987; Guthrie *et al*. 1988).

Both program evaluation and validation require a range of appropriate measuring processes which are formalised to the extent that they are built into TAFE's operational procedures. Appropriate time, money and staff training needs to occur to ensure that such processes can work. Thus evaluations of various kinds together with program validations provide TAFE with measures of its performance at the program level. Whole colleges may also be reviewed and performance information gathered (see Byrne *et al*. 1984a and b). Individual departments might also be reviewed (McDonald and Roe 1984; Roe and Moses 1986; Roe *et al*. 1986) and a range of performance indicators for departments has been suggested. Groups of teachers and individual teachers may attempt to gather information about their performance using such processes as action research, clinical supervision and quality circles (Guthrie 1988a and b). The essential difference between many evaluations and the types of performance indicators being discussed here, is that evaluations can be "one-offs" to solve a short-term political problem or address a periodic need such as program re-accreditation. Other evaluations, and performance indicators, involve an on-going process of information collection. Thus they are used more in a management role and may act as gauges on warning devices which monitor performance.

WHO OWNS THE PERFORMANCE INDICATORS?

Performance indicators can involve more than just "the system" in the decision-making processes. Those within and outside the system have an interest in the measurement of performance. This issue raises several important issues in my mind. First, who owns or is responsible for the consequences of measuring performance? Therefore, who will collect the information? Further, who is entitled to view and to judge what the performance indicators show up? It might be argued that government, TAFE itself and TAFE's various clients (including industry, commerce and other elements of the community) have various rights both to view and judge. It raises the vexed question of, having measured performance what then is done? The answer lies ultimately in the purpose of performance measures. Surely one of the major measurement outcomes must be quality assurance and the improvement of performance. This, in the end, involves people.

Another issue therefore relates to pathways for improvement. It is no coincidence that both figures 4 and 5 end with "individuals" as the focus. Whether one starts with a system or a program area these are, nevertheless, merely artificial organisational units which conveniently group individual people. The failure or success of these organisational units is, ultimately, a reflection of the contribution made by those individuals (and/or the groups or individuals outside them), and the way in which the system is structured, given its purpose. The structure was created by people and can only be changed by them. The way in which the organisational units relate to each other also depends largely on the people within them. If improvement is warranted, it is not the systems that change themselves, but the individuals within (and possibly outside) the systems who can facilitate or prevent change.

The level of performance and its improvement. therefore, depends on individuals contributing to the task at hand and the extent to which the infrastructures they work within enhance or decrease their chances of performing well, or better. I will take up the issue of ownership again later.

PERFORMANCE INDICATORS AND COST-EFFECTIVENESS

As I have already suggested, cost-effectiveness is another performance term often used in TAFE. I believe that it is a component, although a major one, of the wider concept of performance indicators. It is an acknowledgement that costs are an important component in the educational equation; nevertheless it is clear that the efficiency and effectiveness of a system cannot be measured solely in monetary terms. Other indicators of efficiency and effectiveness are needed to complement information about costs to ensure, and assure, that the best use is made of available funds to achieve desired outcomes. Low cost without effectiveness is not a desirable aim for TAFE.

Is cost-effectiveness merely an efficiency measure, or is it something more? Henderson (1987) has discussed the development of performance indicators, particularly in Western Australia. As we have seen, other states as well as the federal government are moving in this direction in order to achieve more efficient, results-oriented management. As Henderson (1987) points out, both Western Australia and New South Wales have stated objectives of 'management performance improvement' or, in other words, they are trying to drive their TAFE dollar further. To that end they seek to measure both efficiency and effectiveness. Efficiency involves the management and utilisation of resources for the maximisation of outputs with minimisation of inputs (see Henderson 1987). Efficiency is also improved when output can be maintained using fewer inputs or when output can be increased with a less than proportionate increase in inputs (Birch and Latcham 1985).

Effectiveness may be regarded as the extent to which program outcomes achieve stated program objectives which have been set by some appropriate body. As Birch and Latcham (1985) suggest, something is effective if it achieves appropriate objectives (for example, objectives which are appropriate to the needs of society); it is efficient if it achieves these objectives with the optimal use of resources. Achievement of objectives is the key. Level of performance is also tied to the degree to which objectives are achieved. To me cost-effectiveness therefore has a notion of effectiveness achieved efficiently. It is not purely an efficiency measure.

All this talk of effectiveness, efficiency and performance indicators is meaningless, however, unless there are appropriate benchmarks - standards against which performance can reasonably be judged. To achieve certain outcomes there are (possibly) a number of alternate ways of doing something, each of which has attached costs. By calculating costs and measuring both efficiency and effectiveness the approach which represents the best way of achieving a particular outcome can be determined. Hence cost-effectiveness measures, amongst other performance indicators of various types, can be used by managers to see how those things which are under their control are performing relative to each other.

FOUR FACTORS TO BE CONSIDERED IN DEVELOPING PERFORMANCE INDICATORS

Four factors need to be considered in developing measures of performance. These are the financial, the educational, the administrative and the political. Performance indicators also have to be suitable for various modes of program delivery - for example, on-campus, off-campus, on-the-job, off-the-job, and national or state/territory based programs. Each of the factors should be dealt with in turn. I shall start with the political.

THE POLITICAL FACTOR

The educational process is an inherently political one. TAFE is no exception to this. Commitments to develop and deliver educational and training programs to meet the needs of particular groups are made by politicians and by others. The sensitivity of a particular program to, and its importance in, achieving the aims of government, the education system and other interest groups lends weight to both the moral and pragmatic dimensions. If something is important morally (such as providing educational opportunities for socially disadvantaged groups) then resources will be committed to ensure results. It may be so political that the solution to the problem and the achievement of outcomes may be judged by very different criteria to those that normally apply. While political issues may not directly affect performance indicators, they may have the effect of changing the balance between the moral and the pragmatic. This, in turn, may change the benchmarks or criteria by which performance is judged thus making the whole process a political one.

The processes of identifying educational and training needs as well as developing, implementing and evaluating programs and courses based on those needs involves political processes as well. There are political forces at work which act between:

- the TAFE system and external interest groups (e.g. government groups representing the interests of industry and commerce, accreditation authorities, licencing boards, training committees etc.);
- the various external interest groups themselves;
- various levels within the TAFE system (for example "Head Office" and the colleges);
- colleges or other groups involved, or likely to be involved, in issues concerned; and

. (occasionally) between TAFE systems themselves.

Political issues may arise from the failure of individuals to negotiate or even just get on with each other and this may lead to the issue escalating out of all proportion to its real magnitude.

Thus every aspect of educational enterprise is actually, or potentially, a political arena. It involves the exercise of power to control or influence process. The proposal to change something very often leads to all sorts of ways being found to subvert or otherwise avoid making any changes at all (Guthrie, 1988c).

Jim Hacker (Lynn and Jay's creation in Yes Prime Minister) describes things this way:

> . . . the point about government is that no one has control. Lots of people have the power to stop something happening - but almost nobody has the power to make anything happen. We have a system of government with the engine of a lawn-mower and the brakes of a Rolls Royce.
>
> (Lynn and Jay (eds.) 1986, p.140)

TAFE's processes, including curriculum development and review, might be described in much the same way. In fact, in a quotation attributed to Machiavelli (which was found pinned to a wall in the offices of a particular TAFE authority) it is suggested:

> There is nothing more difficult to take in hand, more perilous to conduct or more uncertain in its success, than to take the lead in the introduction of a new order of things, because the innovator has for enemies all those who have done well under the old conditions, and lukewarm defenders in those who may do well under the new.

Since everything else in education potentially has a political agenda, it is not surprising that the issue of performance indicators does also. Moreover, if this issue is resolved and indicators are to be, or are being, used the political agendas can then swing to:

. what indicators are being used;

. how they are being used; and

. how valid they are.

The balance achieved between the potentially competing purposes for using performance indicators may itself give some indication of the political forces which have been at work to shape their purposes and use.

In fact, there are a large number of political issues and questions which surround the development, implementation and use of performance indicators. A range of these questions will be presented later when I consider at least some of the issues and concerns raised by performance indicators.

THE FINANCIAL FACTOR

This factor is concerned with the direct and indirect costs of providing education to achieve particular outcomes. The financial factor also is concerned with:

- the costs which are actually attributed to the program and the ability of the accounting system used to calculate the costs of programs and program elements;

- whether the calculation made can be defended.

Moreover, the financial factor is dictated in part by the degree to which existing TAFE infrastructures and boundaries are regarded as sacrosanct. For example, some sectors of TAFE's operations (e.g. the provision of distance education) have the potential to be truly national in character. National co-operation in the development and delivery of distance education programs and materials is possible to achieve real economies of scale. In Australia there are a number of examples of such co-operation already. However there are many essentially artificial barriers to such co-operation as well. Other factors which need to be borne in mind when considering the financial aspects of cost-effectiveness include:

- development costs (these tend to be relatively higher for off-campus study than for face-to-face and include academic and materials production. Nevertheless distance education materials are often used with great effect in the classroom);

- the cost of the chosen delivery systems (a range of alternatives may need to be considered. The costs include development and distribution of resources, methods and amount of student-student and student-staff interaction, the type of student activities used and assessment procedures);

- economies of scale (these not only include the enrolment numbers needed to reduce unit costs considerably, but also the range of offerings - the greater the range offered, the greater the expense);

- the type of course offered (science and technology-based subjects and courses are likely to be more expensive to mount and run. Courses involving significant practical work are also relatively expensive);

- the cost of program or activity review (that is, the cost of gathering the data needed for performance indicators themselves); and

- the "proper" costing of programs (which may not only include the direct costs of the program, but also capital or equipment replacement costs, as well as infrastructure costs for facilities such as administration, libraries, personnel departments, student counselling services etc. However it may not consider costs which are actually incurred by the system but, for various reasons, are never actually charged to a particular program or activity).

Thus the accounting or financial system used needs to be able to measure or estimate costs of various components of the TAFE system and assign these costs appropriately to particular programs or activities. It also needs the ability to allocate income received from students and other sources to various programs. All of this presents a complex accounting exercise, given the diversity of TAFE's operations.

THE ADMINISTRATIVE FACTOR

Face-to-face teaching may involve a high capital outlay in buildings and plant. The costs of salaries alone typically consume 70-80% of recurrent budgets. On the other hand, programs offered off-campus have relatively high administration costs in terms of their distribution and student support systems, as well as their production infrastructures (Ashenden, 1987). However there is a much smaller capital investment in buildings because there is little or no need for large numbers of classrooms and other physical facilities. Nevertheless, real costs are incurred if TAFE colleges or other community facilities (schools, community halls etc.) are used as part of the delivery mechanism. Sometimes the real cost of using facilities remains only a "notional" cost because these costs are never actually calculated.

There are other administrative costs too. For example, student record systems, assessment processes and other administrative aspects associated with delivering and running the services provided. Much of this can now be done by computer management systems. However these costs need to be applied to particular cost centres. Again, this is a relatively complex accounting exercise unless 'rules of thumb' are used. TAFE's administrative infrastructures also need to perform well - they need to be cost-effective. Providers (whether face-to-face or distance) have to reach certain enrolment thresholds in order to achieve

reasonable economies of scale in administrative and other costs. Smaller colleges are claimed to cost more to run than larger ones (Newell 1987) and so the notion of the moral obligation to provide a particular service is used to justify their continuation.

THE EDUCATIONAL FACTOR

The educational factor is concerned with the educational aspects of preparation, delivery and review of programs or activities. Education, of course, as the "nitty-gritty" of the enterprise - the administrative and financial factors are support mechanisms for education, which is the real focus. The educational factor itself has two primary foci - needs (and their related educational objectives) and outcomes. Effectiveness (as I have already said) is the extent to which the objectives have been achieved by the measured outcomes. Appropriateness is measured by relating objectives to the actual needs (see Figure 3). In the present context the educational factor is most concerned with effectiveness and its measurement. However, knowing what the needs really are and what outcomes have been achieved are important features in any effective system of performance indicators. Suitable indicators of effectiveness have to be found and related to measures of efficiency - including costs. What, then, are some of these measures of effectiveness and efficiency? These will be considered in the next section.

SOME PERFORMANCE INDICATORS

INTRODUCTION

There are many lists of performance indicators, some of which will be referred to here. Others are included in the references cited in the Bibliography. While many of the indicators appear to measure the same item (say student withdrawal), the figures they yield may not be comparable unless the definitions are substantially the same. For example, some institutions may consider a student as withdrawn only when that student has formally withdrawn from a program; others may count those students who have functionally withdrawn even though there has been no formal withdrawal. Thus comparing apparently similar indicators requires caution - it can be a trap for the unwary. This is particularly so when a variety of techniques for program delivery is used.

The range of performance indicators is potentially very large. Those chosen depend on:

- the level at which the performance indicators are to be used (i.e. at the system level on the one hand, an individual teacher on the other);
- the appropriateness of the indicator given accountability, management, or other needs - for example, whether the indicators are properly focused on the information needs of TAFE clients or TAFE providers;
- their contribution to a comprehensive package of performance information - that is, the indicators chosen should provide a full and comprehensive indication of performance as possible;
- the objectives of the organisation - the indicators chosen need to reflect the system or organisation's objectives in order to measure its performance validly;
- the ability of the organisation to collect the information - this relates to the personnel, time and money available to a system or organisation for collecting, processing and reporting information.

Lists of performance indicators are contained in the publications of the Further Education Staff College in the United Kingdom (the Coombe Lodge reports) as well as those of the National Center for Research in Vocational Education at Ohio State University in the United States. A number of these publications is cited in the Bibliography.

Some work has been done at the tertiary level in Australia funded by the (then) CTEC Evaluation and Investigations Program, for example Bourke (1986) and Roe and Moses (1986)or by a working party set up by the AVCC and ACDP. Other work has been conducted in the public sector - for example the Program Evaluation Bulletins of the Public Service Board of New South Wales (see Bibliography). Individual TAFE systems in Australia are beginning to develop an active literature on the design and use of performance indicators. There has been a limited (but growing) sharing of expertise between authorities. The Bibliography in this monograph therefore provides references to some of the work reported both here and overseas. The references cited cover performance indicators for systems, colleges and organisations, departments, programs and individuals.

Earlier I referred to a meeting of people from various TAFE authorities which produced a list of suggested performance indicators (TAFE Performance Indicators Planning Group 1988). This list was by no means exhaustive, nor was it intended to be. Nevertheless it was agreed that the list was a good starting point and that the information about the indicators proposed could be collected and would be useful at least at the system level. The list includes two types of measures - those concerned with efficiency and those concerned with effectiveness. The measures which are described below were drawn from a paper presented to the Conference of TAFE Directors. Other measures of efficiency and effectiveness are suggested in the references presented in the Bibliography.

EFFECTIVENESS INDICATORS

These were:

. <u>Graduate success rate</u> - a potentially useful measure of the effectiveness of the match between TAFE courses and labour market requirements. I suggest that the information could include data on their employment status - for example:

  - number employed (full-time/part-time);
  - number employed at an appropriate area given their qualifications;
  - number employed at an appropriate level given their <u>level</u> of qualification;
  - number who are unemployed;
  - number employed outside their area of training;
  - number involved in further study;

. <u>Student satisfaction with course provision</u> - a global measure of students' experiences of a particular course. This indicator has a number of potential dimensions, including the effectiveness of course provision (Were courses and electives available at appropriate locations?),

course content, levels of knowledge and skills gained, physical and other resources provided for the course etc.;

- Sat examination rate - a proxy measure of retention rate;

- Examination pass rate - an indicator of the level of difficulty of a course and its individual subjects and a measure of successful skills acquisition;

- Participation rate by demographic group - a measure of the degree to which TAFE is meeting the needs of its targeted groups and/or the social justice objectives of governments;

- Industry's satisfaction - this indicator is manifested by the degree to which TAFE programs are meeting industry's perceived needs and the extent to which TAFE graduates are seen by industry as having the skills and knowledge to do the work for which they were trained; and

- Annual graduate number - a measure of the number of fully qualified TAFE students available to the labour market each year.

Another measure might include the level of potential demand actually being serviced. This would require the integration of enrolment and graduation data with any available data on labour force planning. Naturally there are many other effectiveness measures that might be used.

EFFICIENCY INDICATORS

The efficiency indicators proposed include:

- Average class size - this indicator is a means of monitoring the efficiency with which TAFE uses its lecturing staff;

- Average hours taught in duty time by full-time TAFE lecturers - another means of measuring the efficiency of staff use;

- Recurrent cost per subject per student - a means of assessing the cost-efficiency of program delivery in a variety of sites, courses, study modes etc. The cost could also be calculated in relation to successful students, surviving students, enrolled students, or in terms of student contact hours; and

- Student contact hours per seat of student capacity - a crude initial measure to assess the efficiency with which TAFE facilities are being used.

Other efficiency measures might include unit costs, which could be broken down by region, college, department, delivery system, course, subject or year. The use of college, course or subject resources and facilities could also be estimated and monitored.

The revenue earned by the system, college or department could also be calculated as a ratio of the total revenues received. It is obvious, therfore, that there are a large number of efficiency measures available for use.

Each of the indicators described can be split up or combined in a number of ways to provide information for appropriate groups - including various levels of management within TAFE's structures. While a number of potential indicators have been identified, there are a number of issues and concerns raised by their definition, development and use. These issues and concerns will now be considered.

SOME QUESTIONS ABOUT PERFORMANCE INDICATORS

Performance indicators are a hot issue in TAFE at the moment. There is considerable pressure from many quarters to see them developed, implemented and used. In particular, impetus has come (as we have seen) from both the federal and state governments as part of their respective drives to improve efficiency and effectiveness in the public sector. It has also come with the adoption of program budgeting by many government departments and agencies. However there are many who have reservations about performance indicators. These reservations stem from their concerns that indicators will become strait-jackets which will hamper rather than help TAFE's operations. Given that performance indicators are inference measures, a series of questions for assessing their relevance and validity might well be asked. I have tried to provide some background discussion about each. The questions include:

- Can performance indicators validly represent reality? This question will be considered in some depth shortly.

- Will more mean better? There is real concern that the development and use of performance indicators is directed solely at improvements in efficiency - in other words, enroling more students, increasing class sizes, using learning resources and other facilities more frequently. This problem stems from the fact that quantity measures are easier to develop and use than quality measures. The quality measures are seen as more intangible and concerned with issues of effectiveness as well as efficiency. It might be argued that TAFE should be more concerned with the quality of its activities and place less emphasis on quantity. Clearly the two need to be balanced, but there is a fear that the emphasis placed on the performance measures by various interested groups will result in an increased emphasis on the measurement of quantity and the demand for more using less.

- Will indicators be imposed rather than negotiated? One issue of concern to many is that performance indicators will be imposed from the top down, by government or other interest groups whether within or outside TAFE. It will be suggested shortly (when the question of "ownership" is considered) that the nature of the performance indicators needs to be negotiated between the provider and the users of the information.

- Who has right of access to what information? This question raises the issue of the "right to know" of particular individuals and groups on the one hand as against the need to protect the rights of individuals and groups whose performance may be reflected in the indicators chosen. While people are, and should be, accountable, it is the consequences which result from the measurement of performance which are raised here. One fear is that the knowledge gained from performance indicators will be used rather more to punish than to praise.

  This question can be resolved once a clear and agreed code of ethics and practice associated with using performance indicators exists.

- Will indicators become strait-jackets which dictate rather than guide decision-making? In this case it is conceivable that those whose performance is being measured strive only to achieve average scores on the "performance tests" the indicators impose. If the indicators chosen are poorly defined and narrowly focused it may lead those assessed to ignore important and innovative ways of improving performance because this improvement will not be measured and therefore not be appreciated by those to whom they are accountable. Moreover those whose performance is appraised may aim to gear their level of performance as close to the benchmark as possible rather than achieve the level of improvement they are really capable of making. In short, they want to preserve some fat to achieve next year's benchmarks. Unless real incentives are offered for real improvement, the only incentive that exists is to improve as much as is necessary to avoid any punitive measures.

- How will indicators be used in decision-making and management processes? This question relates to the purposes behind developing and using performance indicators and the balance struck between their potential roles in the management process. The issue of balancing the roles will be considered in some detail shortly. The other aspect of the question is the effectiveness of the the mechanism developed for using the performance information available. This is the "nitty-gritty" of implementing and using the performance indicators to achieve the defined purposes. The relevant concerns are:

  - the balance struck between purposes; and

  - the methods chosen to gather and use the performance information to achieve the purposes.

Moreover there is a danger that the purposes may be stated in one way but, in fact, the indicators may be used in ways which are inappropriate to the stated purposes.

- Do those who interpret what the indicators mean have access to adequate information to make proper decisions? This question raise issues which include:

  - How much of a certain type of information is enough to make proper decisions?; and
  - What balance needs to be struck between the alternative sources of information so that proper decisions are made?

  The question raises the issues of the validity of the total package of information available from all the relevant indicators. It is also concerned with whether the information is verifiable. That is, if one gave the task of measuring performance to another individual or group, would they come up with the same sorts of conclusions and suggest the same actions or decisions. The point here is whether the information available from the chosen indicators is enough to make defensible decisions at an appropriate time although, with the benefit of hindsight people may never have enough information.

All of these are important questions. They lead me to ask a range of further questions about performance indicators and their use. I have tried to be as comprehensive as possible in posing these questions. I will not only discuss briefly each of the questions raised, but also take up in greater detail some of the issues raised by the questions shortly.

The questions include:

- **What records and other data are routinely kept within TAFE systems (student, exam, accounting etc.), and would these records assist in the development of appropriate performance indicators? How readily can these data be accessed, consolidated or upgraded (if necessary) to meet the needs of a performance indicator system?** These questions relate to the data bases which a TAFE system maintains at its various operational levels. The first steps in answering these questions are to establish what the chosen indicators of performance will be and how they will be measured. Given this, the next step is to establish what relevant information is, or should be, already available and its sources. This raises the issue of the compatibility of the various data bases on which the information needed is held and the extent to which this information can be accessed and manipulated to obtain the indicators required. It is tempting to let the available information determine what is needed. This temptation should be resisted.

- **What benchmarks for indicators are appropriate? To what extent do indicators for various modes of delivery have to be comparable? Who sets the criteria for "success"?** Obviously any chosen benchmarks have to be reasonable and take appropriate account of the moral and pragmatic dimensions of TAFE's activities. To be appropriate, those involved need to agree on the benchmarks; that is, what will be the agreed criteria for "success". The indicators chosen have to be fair and take account of alternative ways of achieving outcomes. They should not be biased to reflect favourably on a limited range of alternatives.

- **Which indicators of performance would be valid and useful? What are appropriate definitions for any selected indicators? Are these definitions broadly applicable:**

  - **across modes of delivery?**

  - **within individual states or territories?**

  - **nationally?**

  The question of validity is considered shortly. The usefulness of particular indicators will be determined by the need to know. This is a management decision which could centre on likely areas where performance, particularly poor performance, would be a critical issue. The decisions about which indicators are useful and valid are determined by the information particular groups and individuals within or outside the system require to help them to make decisions and judge quality. The appropriateness of indicators depends, therefore, on the balance of purposes and the ways in which the information is used. Whatever happens the definitions used must be <u>agreed</u> to ensure that indicators are verifiable by independent audit if required. Again, to be fair to all parties concerned, definitions have to be applicable across modes of delivery and certainly within states. It is arguable that the definitions of agreed key indicators should be common nationally to ensure that any comparisons made between TAFE systems (for example) are valid.

- **How will the indicators be collected? How will records be maintained?** These questions clearly have to be addressed during the development and implementation of any systematic gathering of information. Whatever method is chosen it needs to be cost-effective and those helping to collect and maintain records need to agree that theirs is a useful role and that adequate time and resources have been allowed to enable the information to be collected.

- **How will indica' ɔrs be used in the decision-making processes?**

  - **at** s '*ɔrritory level?
  - **natio**nally?

Again, this questi n needs to be addressed during the process of developing and implementing indicators. At the state/territory level their use in decision-making is most likely to be in discussions between government and TAFE on the provision of resources, and between TAFE's central office and individual colleges and other providers over the level of resources they will receive. Clearly the resource allocation will be agreed in terms of the negotiated and agreed benchmarks.

A similar argument would apply at the national level with state governments, TAFE systems or eve individual providers negotiating with federal authorities over resource allocations based on agreed performance levels and methods of measuring performance. Within TAFE systems, and particularly at the college or program levels, the indicators may be less tied to resource agreements and used rather more as means of quality assurance and identifying ways of making operational improvements. The decision-making process does not necessarily have resource implications.

- **To what extent would performance indicators be used for internal management purposes as against external accountability requirements?** This question will be considered in greater detail when I consider how the various roles of performance indicators could be balanced.

- **How** might the internal usefulness of indicators be **maximised?** The usefulness will be maximised if those within TAFE systems agree with the performance indicators chosen and the methods by which the information is gathered and used. Ownership of the process will enhance their utilization. Ownership also implies that there has been negotiation and agreement between the various providers and clients of TAFE's services.

- **How might social justice indicators be developed and gathered? Are these needed? How valid would they be?** The issue of social justice indicators is difficult to address. Certainly such indicators should be developed because social justice is an important part of TAFE's mission. The mix of TAFE students can be examined to determine what groups are participating and their proportion given their size. This participation, however, should be related to the types of programs in which they

participate - for example, does a particular disadvantaged group participate in access programs, but then never actually join mainstream programs or gain employment? Setting benchmarks and devising valid measures which address social justice issues is difficult. In allocating resources an appropriate balance also needs to be struck between moral and pragmatic demands. Where this point should lie is always open to considerable debate because the cost of delivering services to certain groups is often out of all proportion to the benchmarks which are normally accepted.

- How do we avoid making indicators strait-jackets? The danger is that indicators may become rather less indicative and rather more prescriptive. This issue of performance indicators becoming strait-jackets has already been discussed at some length (see page 31). Negotiation between the client and the provider of the performance information should help avoid prescription and depends, in part, on a comprehensive set of indicators being employed which does not merely concentrate on the easy and convenient, but rather attempts to obtain measures which are valid and useful to all concerned.

- What system of penalties or incentives, if any, should exist for individuals or groups who exceed or fail to meet targets? There is little point in measuring performance if no use is to be made of the information. While it is argued that the major use of such indictors should be self-regulation, there is little doubt that both penalties and incentives in some suitable form are required. There need to be incentives to encourage people and groups to rate as high as possible and their achievement should be recognised in some way. Penalties should be imposed too, but only on the basis that a better performance was undoubtedly possible given the circumstances. Failure to meet benchmarks or targets <u>may</u> merely be a reflection of the unreasonableness of those targets in the first place.

- How do we avoid overloading managers, and others, with information? When information becomes available, there can be a temptation to provide too much rather than too little. Clearly managers need training on how to interpret and use the information performance indicators provide. However considerable attention should be paid to the way in which the collected information is processed and reported, so that the manager is given a balanced view, but nevertheless sufficient information for the purposes of decision-making. Achieving this balance is rather more of an art form than a science

- **How much time, effort and money will the collection of performance information cost?** If little or no effort has been put into gathering performance information previously, additional time and other resources will be needed initially to set up and run a system for gathering performance information.

  Those developing and using such a system need to ensure that the system chosen is effective, whilst also being efficient. It needs to be tempered with pragmatism; there is a law of diminishing returns whereby an improvement in the accuracy of available information can only be achieved with much greater cost of time, money and effort. The system has to be seen to be worth what it costs once the collection of information becomes more routine.

- **What ethical issues, if any, are involved in the collection and maintenance of performance indicators?** There are clearly ethical issues involved in the collection and maintenance of performance information and these have already been discussed to some extent earlier. If management decisions are made, and if rewards or penalties are imposed which are subsequently shown not to be warranted, then considerable doubt must be cast on the validity and reliability (verifiability) of the indicators used. Moreover it may not be the indicators themselves that are at fault, but the way in which they have been interpreted and used. There are also ethical issues involved if an individual's career and opportunities can be unjustly affected through their use. Some code of practice is needed which balances the protection of peoples' rights with requirements for full and frank disclosure of important information.

- **How will any activities to develop performance indicators in particular territories and states be integrated with other, similar developments in TAFE at the state/territory and national levels?** Most TAFE systems in Australia have already developed, or are beginning to develop, performance indicators. The amount of information exchanged both formally and informally between states is heartening. It is clear that such a process will continue, and that the merit of developing and using key indicators based on nationally agreed definitions and methods of gathering information has been recognised.

- **How do we avoid biasing the information collected, given that certain information is more readily collected?** This question will be considered in greater depth shortly. Any suite of performance indicators needs to be as comprehensive as possible. Efficiency and effectiveness measures alike need to be developed and, at certain points, the appropriateness of the chosen strategies and activities

has to be judged in the light of the "real" needs. In this way the information collected should not be biased. The chance of bias is increased when only readily available measures of performance are used. Such measures are likely not to be comprehensive. Bias is also reduced if there are agreed procedures for gathering, processing, interpreting and reporting the performance information.

- Who controls the selection of the information to be gathered? Who "owns" and has control over the ways in which the information is gathered and reported? These questions are considered shortly when I take up the issue of ownership of the process.

- What account is taken of performance indicators which measure long-term success as against those which measure short-term success? While this issue will be considered in more detail shortly it is clear that any valid measures of performance concerned with effectiveness need to take account of both the long-term and short-term measures of "success". However there is a problem of assigning responsibility for whatever success has been achieved.

- Who is responsible for, or has contributed most to, the successful achievement of outcomes? This question will be considered when validity is discussed.

- How readily can information collected be combined or split up? The degree to which information can be combined or split up will depend on the data base or bases used and their compatibility. Moreover, if the system has been designed purely to obtain, process and output specific information, it is possible that it will be relatively inflexible. To use performance indicators to maximum effect requires the careful drafting of system specifications so that they retain the maximum flexibility should presently unforeseen information needs arise.

These and other questions touch on vital issues of concern to those involved in measuring performance.

PERFORMANCE INDICATORS - SOME ISSUES OF CONCERN

The questions posed above raise in my mind at least, a number of key issues requiring more detailed discussion. These issues are:

- the ownership of the process;

- the balancing of the various roles of the process (i.e. the translation of theory into practice);

- the collection of information; and

. the validity of the process.

Naturally these issues are clearly linked, but I will try to discuss them individually.

Ownership

I have already briefly considered the issue of ownership of the process when performance indicators were first defined and discussed. The questions raised included:

- Who owns, or is responsible for the consequences of measuring performance?

and

- Who is entitled to view and to judge what the indicators reveal?

These questions are difficult to answer generally. The situation will vary from state to state and be affected by the legislation in place, the organisational structure of the system and the extent and ways in which performance indicators are used in that system.

The ownership of the performance indicators is very much tied up with the balance between its functions. The legislation in some states imposes a "top-down" demand on TAFE systems to provide information about their performance. It is an accountability function, but undoubtedly it can also be used in government planning and also in managing resource allocation. On the other hand, a "bottom-up" process exists where managers at various levels in TAFE require performance information for accountability purposes and for planning, decision-making and quality assurance. If, ultimately, the process of top-down accountability is intended to introduce processes of self-regulation, then the chances of TAFE owning and using the performance indicators are enhanced. This likelihood is further enhanced if the TAFE system commits enough resources to develop an appropriate and comprehensive system for measuring performance and ensuring that the system works. For effective implementation, the task of collecting and reporting performance indicators cannot be an additional burden which is imposed on a system which may already be overstretched. In this situation there have to be trade-offs if the maintenance of an effective system for measuring performance is felt to be important.

Moreover, a distinction has to be drawn between ownership of and interest in the processes of measuring performance. While various hierarchical levels may require the collection, processing and reporting of information relating to performance, they may only require it from time to time. If they are not working with this information regularly they could be said to have an interest in the information collected, rather than "owning" it.

Moreover those higher in the hierarchy depend on the goodwill of those in lower levels in the system to provide this information gathering service. Thus, to enhance opportunities for getting useful information the task of gathering must not be a chore - there must be something in it for the gatherers and users - for the real owners.

Too often systems for monitoring performance are introduced with little understanding of the implications. Information does not collect itself, and to impose additional work on a system which sees itself as overworked or threatened is a recipe for disaster. To improve ownership, therefore, layers of indicators are required which, together, make up a useful data base for measuring performance and which satisfy the needs of all those who require such information and, ultimately, those who legislated that certain information should be provided.

The two main groups interested in ownership are the clients and the providers. Theodossin (1987) describes clients as those who make demands, and providers as those who attempt to satisfy those demands. Clients clearly include students; industry; commerce; government and semi-government organisations; TAFE administrations; particular social, ethnic and other community groups (including support services); industry training committees; college directors and their councils; regional managers; heads of departments and licensing authorities. This list, of course, is by no means exhaustive.

Providers encompass a wide range of individuals and groups, including TAFE systems, administrators, college directors, heads of departments, teachers, support staff, etc. Needless to say particular groups and individuals can be both providers and clients. Their role depends on the context. Their view of the world and their information needs will be different depending on the role they are playing at that particular time. Thus it is not surprising that the question of who owns the performance indicators is a difficult one. The fact is, the process of gathering performance indicators is not a process, but many processes which, potentially, inter-relate. It is important to resolve ownership questions to avoid the waste of resources and to devise an information gathering system that enables information to be aggregated, disaggregated and assembled efficiently according to the needs of particular clients. Some of the clients are outside government and the TAFE system. Their ownership, as I have said, is not a constant one; they may only want to be involved occasionally when critical issues present themselves. Their right to know is therefore difficult to determine because they are often outside any recognised management structure. To say that the processes involved in gathering and integrating performance information are complex and difficult is to understate the problem of the right of access to information. To work best the system requires the agreement of many parties to ensure that the necessary

information is available. There must also be clear guidelines about what information can be made available and there are, as we have seen, considerable ethical issues involved.

Balancing the roles

Performance indicators clearly have a role as accountability measures. This cannot be denied. Nevertheless individuals can be held accountable without any serious attempt being made to evaluate their performance (McTaggart 1988). Thus accountability can be about exercising power, and performance indicators can be used to provide the means to exercise that power. On the other hand, I have suggested that performance indicators have a role in the management, quality assurance and decision-making processes. Again, the effectiveness of the performance indicators used in these roles depends on the value and the validity of the chosen indicators.

In management they can be used to hold groups or individuals to account for their performance - possibly using internally imposed criteria. As I have already suggested, this management style, although it might work, can tend to focus on failures in performance, rather than providing a balanced view of the performance which combines elements of good performance with those where improvements might be made.

If the demand for performance indicators is rather less for accountability purposes and rather more for self-regulation then, as I have already suggested, the problem of ownership of the performance indicators will be lessened. People do not want to teach a poor course; people do not wish to see money wasted on facilities that are not really needed. Many would like to find ways in which they could improve, or their department, college or TAFE system could become more efficient and effective. Balancing the role of indicators should emphasise the management role to assist with decision-making and to ensure that the quality of TAFE's activities and operations is at least maintained, if not enhanced. On balance the accountability role should be played down

Collecting the information within a TAFE system

A comprehensive system of performance monitoring requires that information be collected at a variety of levels within a TAFE system; this information may then be consolidated at higher levels within the system until it is reported externally to various interested clients. Clearly in collecting information the requirements of both clients and providers need to be identified and balanced appropriately.

A comprehensive, but cost-effective means of gathering and reporting information is required. What is needed is a system which enables an organisation not only to fulfil its obligations

(that is, be accountable) but also to defend itself against the possible consequences of ill-informed decisions made on the basis of inadequate information. This applies not only at the system level but also at other operational levels.

As data are progressively consolidated, distinctions between the various subgroups can become blurred. Thus poor and exceptional performances alike become disguised, unless the poor performers are large and swamp the better performances of lesser groups. Therefore, as information is combined there is always the danger that its richness and variety will be lost. Making decisions using these combined data and their associated benchmarks or formulae can be unfair and demonstrate a lack of sensitivity to the range of prevailing circumstances.

Who collects this information? A range of people will clearly be involved. TAFE records are maintained by administration staff based in colleges and centrally, and these databases will also contain much of what is needed. The potential problems in the short- to medium-term include the compatibility of various data bases and the extent to which the data within them can be combined and manipulated to produce the desired performance measures. This can be overcome if the information system is flexible and capable of interrogation. There is a problem, however, if an information system is designed merely for the here and now.

Lecturing, curriculum development and research staff also have a role to play in gathering, processing and reporting information. They are likely to be most interested in the indicators of program effectiveness and appropriateness. However, when comprehensive reports on indicators are required, the most likely problem is that people at various levels within the system will be unaware of what information is available elsewhere and how it can be accessed. There may be concerns about how effectively the information can be used, given that many within TAFE have had little or no experience in collecting, processing and evaluating information about performance.

Moreover, definitions of particular indicators have to be agreed upon and applied consistently to ensure that the information collected is comparable between (for example) institutions and programs and that it can be aggregated validly. Those interested in the Yes Minister series may recall the occasion when a particular council had not sent in its statistical returns and was to be disciplined by Hacker's department even though it was the most efficient council in the U.K. Nevertheless information (although perhaps not the most valid information) had to be collected:

Sir Humphrey was quick to explain:

> 'If local authorities don't send us the statistics we ask for, then government figures will be nonsense. They'll be incomplete!'
>
> I (Hacker) pointed out that government figures are a nonsense anyway. No one denied it, but Bernard suggested that Sir Humphrey wanted to ensure that they are a complete nonsense.
>
> (Lynn and Jay (eds.), 1984, p. 493)

Such a situation arose in the United States when the Department of Defence used body count (the number of Vietnamese dead) as an indicator of its military success (McTaggert 1988). Such a count was capable of such gross manipulation and falsification that it was complete nonsense. How much does this sound like TAFE's ill- conceived performance indicator which is referred to in polite TAFE circles as "peoples' posterior parts on chairs"?

The aim of having performance indicators is not to produce nonsense, complete or otherwise. Definitions and indicators that do make sense and that are useful and valid are what a TAFE system requires.

The problem with measuring outcomes is that many of them are nebulous, difficult to define and harder to measure - even indirectly. If a desired outcome is to produce graduates who can solve problems, think creatively or transfer knowledge and skills from familiar to new situations, it may be difficult to measure the extent to which graduates have achieved those particular desired outcomes. Certainly, assessment activities can be devised which could test the achievement of those outcomes. Employees, the graduates' immediate superiors and the graduates themselves might be able to provide indications of the extent to which particular outcomes had been achieved. Nevertheless some outcomes take longer to achieve than others. Moreover some graduates might not be placed in a situation which tests their achievement of the particular outcome in the work place. Finally, if their TAFE training has occurred while they were working who is to say whether the program or other aspects of their private life, their work or even their previous experiences prior to undertaking training contributed most to their apparent ability to (say) solve problems. In short, having observed the outcome, can it be said with certainty that the program, or TAFE, was largely responsible for that outcome being achieved? Thus it has to be acknowledged that performance indicators are what they are - indicators. They are gauges of performance and unusually high or low levels of performance might be questioned. It may be that the performance is acceptable or, at least, explainable. It may also indicate, however, that there is a performance problem which needs to be

addressed. Much of the real value of performance indicators comes from using a variety of measures and in the valid interpretation of their meaning. In this way the interpretations made can be defended.

The validity of the process

Whenever indirect measures are used people may question their validity. Moreover, it is easier to gather data about some performance indicators than others. It is likely that these "easy" measures may be chosen even though they are biased and, together, do not constitute a comprehensive measure of performance. Others argue that anything is better than nothing. However, if the measures lack real validity there is the strong possibility that the management and decision-making processes served by the indicators will be little better informed than they were in the absence of data. Numbers have a beguiling face validity because we can see them and compare them, believing in their validity without really looking behind the facade to see whether the indicator(s) chosen have substance. As Henderson (1987) has recognised, there is a distinct possibility that performance indicators will be devised and then their implementation approached from an unrealistic, bean-counting perspective. The danger of this increases as the information is progressively aggregated. Indicators are like icebergs and managers have to ensure that what they can see is a valid representation of what is. The system depends on having a number of measures of an aspect of performance which should help both to measure and explain the performance. The validity also depends on the benchmarks chosen. If these benchmarks are unreasonable and extreme no performance, however good, can measure up. In the end it is people who define what is, and is not, a reasonable benchmark. Thus the benchmarks used have to be flexible and tempered by the twin demands of moral obligation and pragmatism.

Furthermore, the performance indicators chosen also have to be verifiable as well as valid (see Henderson 1987). The indicator is of little use if an independent individual or group using the same information cannot arrive at a similar answer or conclusion. To be verifiable it is necessary that definitions and benchmarks for indicators be clearly stated. Moreover, the ways in which the indicators are calculated and data are combined or split needs to be documented appropriately. If the information used in the decision-making or management processes is not verifiable it is not likely to be defensible either.

The quest for validity also has to be tempered by pragmatism. There are economies of scale to be considered and the need for validity needs also to take into account the costs of obtaining timely and valid performance measures. The question for administrators and those responsible for gathering information is - how much is enough? When is the improvement in accuracy of the information not worth the cost of achieving that level of accuracy?

Indicators also depend on the validity of the objectives, mission statements, or whatever is being used as a basis for determining effectiveness. If the objectives do not reflect needs (i.e. the objectives are inappropriate), or if the identified needs do not properly reflect the real needs, then the basis for making valid judgements about performance is seriously threatened. Needs identification, occupational analysis and training needs analysis are all part of the curriculum research and development function. Course validation determines the extent to which the various needs were actually met. This forms part of a cyclical and continuous process of program development and review. The extent to which needs have been met and missions fulfilled is, as we have seen, extremely difficult to measure, yet measures of quality are of critical importance in terms of judging TAFE's effectiveness (Henderson 1987).

SOME CONCLUSIONS

This monograph has attempted to bring together some of the literature from both Australia and overseas related to the use of performance indicators by TAFE. In Australia it is clear that the major impetus for the development and use of such indicators has come from demands by TAFE's clients, principally the state and federal governments, to provide evidence that TAFE is performing efficiently and effectively. The monograph has examined, and put the arguments both for and against using performance indicators. It has also defined and discussed the term performance indicator, particularly in the context of improving efficiency and cost-effectiveness. Indicators not only have an accountability role but also a role in improving management and decision-making processes. They are also used as a quality assurance tool.

From the available information it seems that:

- performance indicators will become an increasingly important part of TAFE's methods of planning, operation and management given state and federal adoption of program budgeting;

- performance indicators can be justified on theoretical, moral and pragmatic grounds; however, what makes them useful is the extent to which the good theory behind them can be translated into good practice in using them;

- the development and use of performance indicators is an intensely political process and needs to be recognised as such;

- TAFE systems and those within them need to recognise the value <u>for themselves</u> in using performance indicators. If the indicators are not directly useful within TAFE there will be little or no incentive to own them. It will just be another chore;

- whilst they are theoretically defensible, the ways in which they are designed and used may give rise to concerns about their validity as measures of performance. There is a danger that their users will expect more than the performance measures can actually deliver;

- the performance indicators chosen need to be adaptable to the variety of ways TAFE uses to meet its obligations;

- there will be increasing pressure on TAFE systems across Australia to develop uniform measures of performance - given the possibility that performance measures which are similar but not comparable will, in fact, be compared;

- some TAFE systems have already done a considerable amount of work in designing, trialing and using various performance measures. Other TAFE systems have only begun to explore the potential inherant in performance indicators and can therefore learn a lot from more experienced states. There is a strong need to develop a network and dialogue between TAFE systems;

- if TAFE systems decide to develop and use performance indicators they have to make a real commitment to making them work. Those who will collect, analyse and use the information need the time and expertise to collect and use the information judiciously. To impose performance measures as an additional load on inexperienced staff will ultimately be counterproductive.

I am cautiously optimistic that performance indicators will be a beneficial tool for use not only by those outside, but also by those inside TAFE systems. My note of caution stems from questions about the ownership and the validity of performance indicators and the need for appropriate methods of information collection. The optimism springs from the hope that, once TAFE systems have developed and begun to use performance measures, staff at all levels will be convinced of their value and that their use will lead to real improvements in TAFE's performance.

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